

CS23196RL

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**MULTI-PASS INTERFERENCE REDUCTION
IN A GSM COMMUNICATION SYSTEM**

ABSTRACT

An iterative method (400) and apparatus (200) for a receiver for reducing
5 interference in a desired signal in a GSM communication system that use a finite-
impulse-response filter combined with alternate quadrature component output
selection for alternate linear equalization. The method includes inputting a burst of
data of a received waveform including interference, training an alternate linear output
filter with a midamble of known quadrature phase, providing an estimate of the
10 desired signal by operating on the received waveform with the finite-impulse-
response filter, generating log likelihood ratio estimates for a plurality of bits in the
burst of data, selecting bits from the burst of data base upon a predetermined
condition, and re-training the alternate linear output filter to provide a second
improved estimate of the desired signal.